



Case No.: 50371US011

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: OUDERKIRK, ANDREW J.

Application No.: 09/013819

Group Art Unit: 2872

Filed: January 27, 1998

Examiner: SHAFER, R.

Title: OPTICAL POLARIZER

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REPLY BRIEF

Commissioner for Patents
Washington, DC 20231

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Feb. 10, 2003

Date

Signed by: Heather M. Sumter

Dear Sir:

This Reply Brief is submitted under 37 CFR §1.193(b)(1) in response to the Answer from the Examiner dated December 11, 2002. Each of the following statements made in the Examiner's Answer are responded to by Applicants as follows.

1. Examiner's Answer, Section (11), Part (I):

"[A]ppellant's broad recitation of the term "reflective polarizer" does not preclude element (7), as disclosed in Fig. 7 of the Kondo reference as being considered as a reflective polarizer due to the fact that one polarization component ... is reflected at a boundary between medium I and medium II while the other polarization component ... is transmitted through the boundary.... [The] additional conversion of the S-wave to a P-wave does not preclude the polarizer or that portion of the of the polarizer of Kondo ... as being a reflective polarizer. Moreover, ... the transitional ph[r]ase "comprising" does not exclude ... the additional conversion of the S-wave to P-wave."

Applicants' Response:

Claim 1 (Group 1) stands rejected by the Examiner as being anticipated by Kondo. The Examiner's argument is not only unsustainable, but it is also, at best, inconsistent in that the Examiner, on the one hand, argues that element (7) is a reflective polarizer, and on the other hand, argues that a portion of element (7) is a reflective polarizer.

First, the Examiner is incorrect in categorizing element (7) of Kondo as a reflective polarizer. A reflective polarizer as claimed is an element that *reflects* a first polarization state of light and *transmits* a second polarization state of light. Element (7), taken as whole, does not do this. Rather, element (7), taken as whole, transmits all incident light *regardless* of polarization state. Therefore, it cannot reasonably be said that element (7) is a reflective polarizer as claimed. The specification and even the title in Kondo consistently refer to element (7) as a polarizer and not a reflective polarizer.

Second, even if arguendo, the Examiner's contention that Element (7) of Kondo is a reflective polarizer because a portion of it (the interface between media I and II) is a reflective polarizer were correct, Applicants' claimed invention as whole would still be patentable. Applicants claim an optical polarizer comprising a reflective polarizer and an absorbing polarizer where the reflective polarizer reflects light having a first polarization state and the absorbing polarizer substantially *absorbs* the same first polarization state. The Examiner's reading of Kondo would be explicitly contrary to this claim limitation. For ease of illustration, an annotated version of Kondo's Fig. 7 is shown below. Incident light ray 18, having a first polarization state (\leftrightarrow), is transmitted by element 7 after being twice reflected by the interfaces between media I and II. This ray, now incident on absorbing polarizer (13), maintains its first polarization state (\leftrightarrow). The absorbing polarizer (13) is oriented so that this first polarization state is transmitted, not absorbed, by the absorbing polarizer (13). In the present invention, on the other hand, the claimed reflective polarizer is aligned with the absorbing polarizer such that light reflected by the claimed reflective polarizer is absorbed, not transmitted, by the absorbing polarizer.

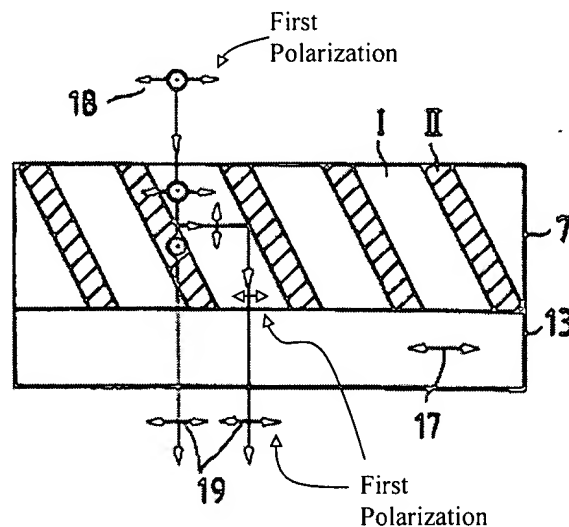


Fig. 7 of Kondo (annotated)

Thus, regardless of how Kondo's disclosure is interpreted by the Examiner, the disclosure does not teach, disclose, or anticipate the Applicants' claim limitations.

2. Examiner's Answer, Section (11), Part (II):

"In regards to the appellant's argument that the reflective polarizer and the ... absorbing polarizer are made as part of the same process, the examiner states that even if one could possibly assert that the above language "formed integral" is drawn to a product-by-process limitation... [such] limitations in a claim drawn to structure is directed to the product per se no matter how actually made [I]t is the patentability of the final product per se which must be determined ... and not the patentability of the process."

Applicants' Response:

Claim 2 (Group 2) stands rejected by the Examiner as being anticipated by Kondo. This claim is directed to those embodiments of the present invention where the reflective polarizer and the absorbing polarizer are made as part of the same process. For example, the absorbing polarizer may be made by incorporating dichroic dyestuff into one or more layers or

skins of a multilayer reflective polarizer or by coating a polyvinyl alcohol onto a surface of the reflective polarizer prior to orientation (see, for example, pages 9-10). In this manner, the reflective polarizer and the absorbing polarizer can be *concurrently formed*.

The rejection ignores certain limitations of Claim 2. In Scripps, the court held that “[i]nvalidity for anticipation requires that *all elements of limitations* of claim are found within single prior art reference; there must be *no difference* between claimed invention and reference disclosure.” Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1576 (1991) (emphasis added). Similarly, in Atlantic Thermoplastic, the court held that “*ignoring* the claim limits of a product-by-process would clash directly with the basic patent principles enunciated by the Supreme Court.” Atlantic Thermoplastics Co., Inc. v. Faytex Corp., 970 F.2d 846 (1992) (emphasis added).

Here, Kondo discloses an absorbing polarizer (13) laminated to a polarizer (7) (col. 8, lines 65-67). Even if element (7) were considered a reflective polarizer, there is no teaching that element (13) could be “formed integral” with element (7). Kondo does not teach, disclose, or anticipate the Applicants’ claim limitation that the reflective polarizer is “formed integral” with an absorbing polarizer.

Furthermore, regardless of how the process limitations in Claim 2 are treated, the claimed final product would not be anticipated by Kondo because, as discussed previously, in the present invention, the absorbing polarizer *absorbs* the polarization state that is reflected by the reflective polarizer, whereas in Kondo, the polarization state reflected by element (7) is *transmitted*, not absorbed, by the absorbing polarizer (13).

3. Examiner's Answer, Section (11), Part (III):

“[I]t is clear from Fig. 7 of Kondo ... that the ... absorbing polarizer (13) is positioned on at least one side of the reflective polarizer (7). While, Kondo ... is silent with respect to stating that the ... absorbing polarizer provides “antireflection”, due to the fact that light travels through the interface between the reflective polarizer and ... absorbing polarizer without reflection, the ... absorbing polarizer of Kondo ... obviously provides antireflection.”

Applicants' Response:

Claim 13 (Group 3) is rejected by the Examiner under Section 103(a) as being obvious over the teachings of Kondo. Claim 13 depends from Claim 1 and recites that "the absorbing polarizer ... provide[s] antireflection on at least one side of the reflective polarizer." This construction has particular advantages, for example, in direct view LCD displays.

In the present invention, either side of the reflective polarizer has high reflection. The reflectance is typically 50% or more (see, for example, page 26, lines 9-19). The addition of an absorbing polarizer reduces reflection of light incident on the absorbing polarizer *side* because the absorbing polarizer absorbs light that, by design, is reflected by the reflective polarizer. Thus, an absorbing polarizer, added to one side of the reflective polarizer, substantially reduces reflection from that side and, therefore, provides antireflection on that side without changing the reflective properties of the other side.

In sharp contrast, *no side* of element (7) of Kondo is designed to substantially reflect *back* light regardless of the state of polarization. As such, the addition of absorbing polarizer (13) to a side of element (7) does not reduce such reflection. Therefore, element (13) of Kondo does not provide the claimed antireflection for element (7). Furthermore, element (13) cannot antireflect element (7) because element (13) is aligned such that it transmits light reflected by the reflective portions of element (7).

Therefore, there is no teaching or suggestion in Kondo of providing antireflection on one side of a reflective polarizer to produce the claimed optical polarizer that reflects light from one side and not the other.

Conclusion

Applicants believe that they have fully refuted the positions taken by the Examiner in maintaining the present rejections. Barring a withdrawal of the rejection by the Examiner in response to the consideration of this Brief, Applicants respectfully request that the Board reverse the decision below.

Respectfully submitted,

10-Feb-03
Date

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